

Don't Drown in Shallow Water

Shallow-Water
Blackout
Is No Joke

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It doesn't seem logical for a skilled swimmer to drown during a routine dive or while swimming underwater, but that danger became a reality in 1998. Three Sailors drowned from shallow-water blackout during training sessions.

Shallow-water blackout is a result of hyperventilating or taking a series of short breaths before going underwater. Although most underwater swimmers find they can hold their breath longer if they hyperventilate before diving, the *U.S. Navy Diving Manual* prohibits the technique.

One of the 1998 victims, a chief petty officer, reportedly was a skilled swimmer who died while alone in a base pool. He was known to practice breath-holding to extend the amount of time he could stay submerged. In this case, when he had problems, there was no one at the pool to assist him.

In August 2001, a sophomore at the U.S. Naval Academy fell victim to shallow-water blackout while doing breath-controlled laps in a yacht club's pool. According to the victim's father, he was trying to go 75 meters underwater when he passed out and went to the bottom. Lifeguards jumped in, pulled him out, and performed CPR until medical personnel arrived and took him to a hospital. Doctors, however, were unable to save him.

A member of the Naval Academy's swim team, the victim was doing exercises designed to help him swim farther underwater. His coach said he tells his members not to hold their breath too long underwater without his supervision or that of another senior academy-swimming instructor. *[No one was supervising the victim the night he died.—Ed.]* During

practice, swimmers aren't allowed to go farther than 25 meters underwater.

The only safe way for swimmers to increase their endurance is through aerobic activity. The Navy is concerned enough about shallow-water blackout that commanders have been directed to inform personnel about this danger and to post warnings in swimming areas.

According to Capt. John Murray, MC, Bureau of Medicine and Surgery, Washington, D.C., taking a few short breaths before going underwater is a natural thing to do. He said that most people who go snorkeling or swimming feel more comfortable if they take a series of breaths before going under.

"It's more of a passed on or learned (behavior)," said Murray. "What's not passed on is the danger," which begins when swimmers take a series of breaths before going underwater. Taking a series of breaths expels the carbon dioxide, allowing the swimmer to stay underwater longer before feeling a need to breathe.

While diving, the levels of carbon dioxide and oxygen levels increase as the depth of the dive increases. As the carbon dioxide builds up, the diver feels a need to breathe and heads to the surface. The level of carbon dioxide decreases as the diver heads to the surface, while the already burned off oxygen supply falls rapidly, causing the diver to become unconscious and possibly drown.

"It's always tragic to lose young people," said Murray. "These were top individuals who pushed themselves past their limits." ■

Some of this information came from the "Navy & Marine Corps Medical News (MN-98-41)," which can be found on the internet at www.navy.mil/navpalib/news/mednews/med98/med98041.txt.—Ed.